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U. S. DEPARTMENT OF AGRICULTURE

okra culture

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OKRA CULTURE

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The okra, or gumbo, plant is a tropical annual, native to Africa. Its young pods have long been popular in the South, where they are commonly used as a vegetable in soups and stews and as a separate dish.

Since about 1925 okra has become more common in fresh vegetable markets farther northward, but it remains a minor crop in the North. In a few districts it is grown extensively for large commercial canneries and freezing plants.

Okra can be grown anywhere in the United States where other vegetables are grown, except in the coolest, northernmost parts or at high altitudes. It is easily injured by frost.

The plant develops so rapidly in areas to which it is suited that it requires only 2 months from planting to harvesting of the first pods. Well-grown plants continue to bear for many weeks, especially if the young pods are all harvested promptly and none are allowed to mature.

VARIETIES

The okra plant generally grows 3 to 7 feet tall, has many branches, and is sturdy and woody. Okra flowers resemble those of cotton and ornamental hibiscus plants.

Okra varieties vary in plant height, and in the length and color of their pods. Pods of some varieties have distinct lengthwise ridges, while those of other varieties are smooth (figs. 1 and 2). The pods of the currently popular varieties described below are spineless.

Perkins Spineless is a dwarf variety; plant height 3 feet; mature pods 7 inches long, ridged, green.

Dwarf Long Pod, or *Dwarf Green Long Pod*, is of the same type as Perkins Spineless; plant height about 3 feet; mature pods 7 to 8 inches long, ridged, green.

Clemson Spineless is of medium plant height, about 4½ feet; mature pods 6 inches long, moderately ridged, green.

Louisiana Green, or *Green Velvet*, is medium-tall; plant height 5 to 6 feet; mature pods about 7 inches long, slender, slightly ridged, green.

White Velvet, or *Ladyfinger*, is medium-tall; plant height 5 to 6 feet; mature pods 6 to 7 inches long, slender, tapered, cylindrical, not ridged, creamy white.

Perkins Mammoth Long Pod is a very tall variety; plant height 6 to 7 feet; mature pods 7 to 8 inches long, ridged, green.

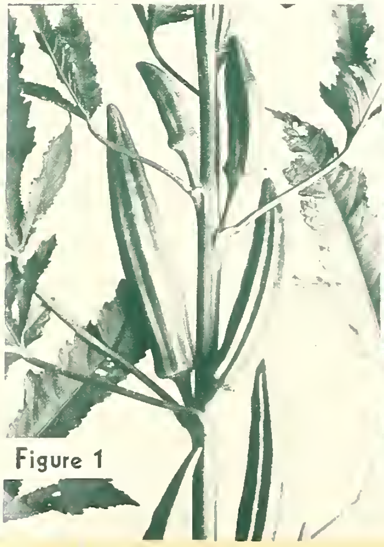

Figure 1

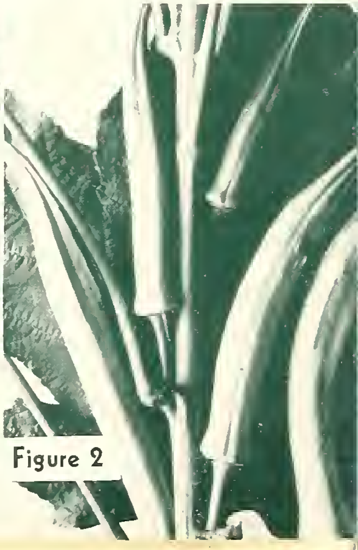

Figure 2

SOIL AND SOIL FERTILITY

Okra grows well in any good well-drained garden or truck-crop soil, but it grows best in a rich sandy loam.

No special preparation or treatment of the soil is required. Plow or spade the soil to moderate depth, and harrow or rake thoroughly to form a good seedbed.

The soil should be well supplied with organic matter. Use 10 to 20 tons per acre per year of animal manure, or plow under green-manure crops, or work compost into the soil.

Commercial fertilizers are generally needed in addition to manures or compost for best yields and quality of okra. Apply 5-8-5 or 5-10-5 fertilizer at the rate of 800 to 1,200 pounds per acre. The rate of application depends on the past management and the richness of the soil. The fertilizer may be broadcast and worked into the soil before planting, or it may be applied at planting time.

If the latter method is used, apply up to 500 or 600 pounds of fertilizer of the same analysis in bands—5 to 6 pounds per 100 feet of row—about 3 inches to each side of the row and a little deeper than the seed is planted. Then broadcast an equal amount of fertilizer between the rows and work it into the soil with a cultivator.

SEED TREATMENT

Under most conditions, seed germination and plant stand may be improved by treating the seed with a chemical to control certain fungi that cause seed decay or destroy the seedlings before emergence. Chloranil or thiram (Arasan) are effective seed-treating chemicals. To treat seed with chloranil, mix ¾ level teaspoonful of the chemical with 1 pound of seed (or 6 ounces per 100 pounds). For thiram, use ½ level teaspoonful per pound of seed (or 4 ounces per 100 pounds).

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FIGURE 1.—*Tall, green, ridged type of okra.*

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FIGURE 2.—*Ladyfinger type of okra.*

PLANTING AND CULTIVATING

One planting of okra is made each season, except in the warmer parts of the South. Plant the seed as soon as the soil has warmed up well and all danger of frost is past.

For dwarf varieties, space the rows about 3½ feet apart; for medium-tall varieties, 4 feet; and for tall varieties, 4½ feet. Plant, either by hand or with a seed drill, 3 to 4 seeds per foot of row. Seed requirement is 8 to 10 pounds per acre, or 1 ounce per 100 feet of row.

Thin the plants when they are 3 or 4 inches high. Plants of dwarf varieties should be about 1 foot apart in the row; plants of tall varieties should be 1½ to 2 feet apart.

In the lower South, later plantings may be made at intervals of about 6 weeks if a continuous supply of pods is desired throughout the long season. Experience in any locality will indicate when successive plantings should be made to bring in a new crop when the yield and quality of an earlier planting decline.

Hoeing or cultivating to control weeds should be shallow.

HARVESTING

Except in unusually hot weather, an okra pod usually reaches a very good stage for eating in 4 to 6 days after the flower opens. The pods of most popular varieties are 3 to 3½ inches long at this stage, and are tender and free of fiber. One or two more days of growth makes the pods tough and of poor quality.

Pick pods at least every second day—and preferably every day—to obtain the best size and quality. Pods less than 3 inches long are very good to eat, but harvesting at such a small size results in low yields. However large yields must not be sought by allowing the pods to approach full size, because then they are tough and fibrous.

Harvested pods must be kept reasonably cool and well ventilated. Okra pods in large or closely packed containers are likely to be spoiled by heating.

INSECT CONTROL

In general the okra plant is not seriously injured by insects. The corn earworm, or bollworm, bores into the pods and makes them unfit for food; and the southern green stink bug and some other plant bugs pierce the pods and extract the plant juices. As this damage occurs late in the season, however, the loss is usually negligible.

The melon aphid, the blister beetles, the Japanese beetle, and flea beetles, feed on the foliage of okra, but this feeding usually does not affect the production of pods.

All these insects except the melon aphid may be controlled by applying 5-percent DDT dust or a spray containing 2½ pounds of 50-percent DDT wettable powder or 2½ quarts of 25-percent DDT emulsifiable concentrate per 100 gallons. Apply about 25 pounds of the dust per acre or 100 gallons of the spray.

Prevent harmful residues on the edible pods by removing the pods before applying DDT. If it is not practical to remove all the pods, do not apply DDT within 7 days before harvest.

To control aphids, apply a 5-percent malathion dust or a spray containing 2 pints of 50-percent malathion emulsifiable concentrate, or 2 pints of nicotine sulfate solution (40-percent nicotine) per 100 gallons. The rate of application is the same as for DDT. Remove all the edible pods before applying malathion. The nicotine sulfate spray should also contain 4 pounds of mild alkaline soap (readily dissolved form) per 100 gallons and should be applied only when the air temperature is 70° F. or above. Do not apply nicotine sulfate within 3 days before harvest.

The southern green stink bug and other plant bugs may also be controlled by applying a dust containing 10 to 20 percent of sabadilla. (Persons applying an insecticide containing sabadilla may suffer irritation of the nasal passages and sneeze considerably. Proper use of a respirator will reduce this discomfort.) Do not apply sabadilla within 1 day before a harvest.

In small gardens, persistent handpicking of stink bugs, the Japanese beetle, and blister beetles usually gives sufficient control. As blister beetles may blister tender skin, wear gloves when handling them. Malathion applied as for aphids will control the Japanese beetle.

PRECAUTIONS

Most insecticides are poisons. Handle them with care. Store them in closed containers where they cannot be mistaken for food or medicine, and where children or farm animals cannot reach them. See that the containers are properly labeled. Follow the directions and warnings on the container label. Wash your hands and other exposed parts of the body after working with any insecticide.

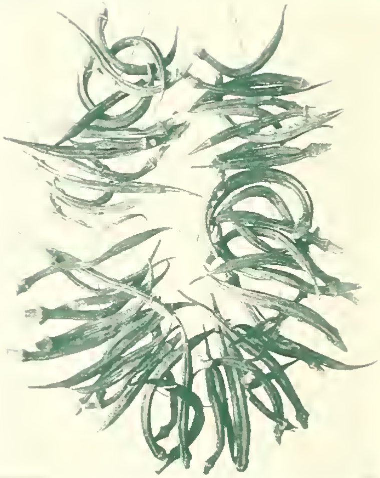

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FIGURE 3.—*Large pods of okra dried for winter use.*

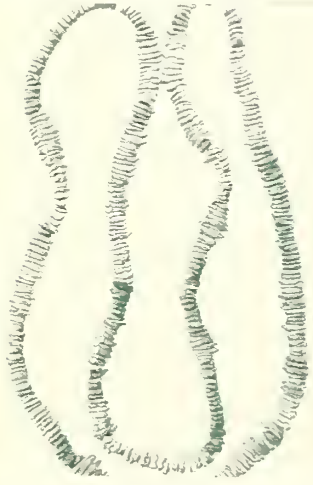

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FIGURE 4.—*Small pods of okra dried for winter use.*

FOOD VALUE AND USE

At good edible stage, okra pods contain about 90 percent of water, 2 percent of protein, 7 percent of carbohydrates, and 1 percent of minerals. Like most other green, fresh vegetables, okra is low in calories; it is valuable as a food chiefly for its bulk, minerals, and vitamins.

Okra is a good source of calcium and a fair source of iron. Fresh pods of the green varieties are rich in provitamin A. Dried okra contains not more than half of the provitamin A present in fresh pods. Fresh pods are a fair to good source of vitamin B. Young pods 2½ to 3 inches long are almost twice as rich in vitamin C as older pods 5½ to 6 inches long.

Use the pods promptly after harvest, or refrigerate them. At ordinary refrigerator temperature (50° F.) vitamin C loss is slight. At room temperature, however, vitamin C is lost rapidly: nearly half of it disappears in 24 hours.

Okra is used as an ingredient of soups, stews, and various "creole" dishes. When it is cooked "straight" its mucilaginous properties do not suit most people. When it is fried, either plain or dipped in cornmeal, the mucilage in it is less evident than if it is boiled.

Okra may be preserved by drying, quick-freezing, canning, or by being barreled in brine.

Drying is accomplished by stringing whole small pods and hanging them up to dry (figs. 3 and 4), or by drying sliced pods on cloth trays.

The brine preservation method is used by commercial packers who supply okra to large canners of soups and related products. Thousands of tons of okra are grown in the South for this market, for quick-freezing, and for canning. Okra is canned also in mixtures with tomatoes and with sweet corn and tomatoes.

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